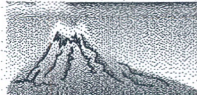


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Fossils: Images From Life's Past



Now and then, a living thing manages to die in such a way that its remains are at least partially preserved in sedimentary rocks as **fossils**. Animals may also leave **trace fossils** behind in the form of tracks, tunnels, and excrement (poop). Someday, soda cans and action figures could become trace fossils.

Should you ever wish to improve your chances of becoming a fossil, here's a plan:

1. **Hard things** like bone, teeth, and tree trunks often fossilize well. As a vertebrate with a calcium-phosphate skeleton and enamel-coated teeth, you come equipped with excellent hard parts.
2. **Get buried quickly** under muck or a massive cave-in so that scavengers don't gnaw your bones to shreds, and wind and water don't destroy them. Creatures living in areas of sedimentary deposition like a river or ocean basin have a better shot at fossilization than mountain-living animals or plants—unless the latter are buried by a volcanic lava flow.
3. You have to get lucky, too, (if that's the right word!) and **be preserved someplace where your rocky remains don't get "rock recycled" too quickly!**

Fossils may form in a variety of ways:

1. Some creatures fall or get stuck in **tar**—a natural asphalt like that found in California's LaBrea Tar Pits. Insects often get stuck in tree sap that later hardens to **amber**. Sometimes animals may be **freeze-dried** in a glacier or on a mountaintop, like the 5,000-year-old "ice man" found in the Italian Alps.
2. When creatures get buried in sediments or by lava and later soak in mineral-laden water, they may literally turn to stone and become **petrified**. This kind of preservation may show detail down to the level of individual cells, like Arizona's petrified forest.
3. Animals or plants buried in lake sediments or swamps that slowly decay while being squeezed and slow-cooked will become **carbonized**. They look a bit like rock road kill.
4. Sometimes only a creature's shape is preserved as either a **cast** or a **mold**. Eruptions of Mt. Vesuvius in Italy have covered humans with lava. The lava hardens into a mold, while the body inside decays. If the mold later fills with sediment or more lava, a cast forms that reproduces the original body shape.
5. Trace fossils like footprints or tunnels dug in moist sand will sometimes dry quickly, be buried, and then compressed into stone. Fossil dung may get covered quickly and later petrify.

However they are formed, fossils provide clues to the 99% of Earth's organisms that have become **extinct** (no longer exist). **Paleontologists** study fossils to reconstruct Earth's living past.



Reinforcement

Fossils

Directions: Write **fossil** if the statement describes a fossil. Write the word **no** in front of statements that do not describe a fossil. After each fossil description, name the type described.

- | | | |
|-------|--|-------|
| _____ | 1. oil formed from sea animals of long ago | _____ |
| _____ | 2. bird tracks in snow | _____ |
| _____ | 3. shell-shaped mineral found in rock cavity | _____ |
| _____ | 4. insect in amber from a pine tree | _____ |
| _____ | 5. dinosaur tracks in rocks | _____ |
| _____ | 6. sandstone showing ripple marks from water | _____ |
| _____ | 7. rocklike parts of a species of fish that lived a short time in parts of the world | _____ |
| _____ | 8. arrowhead made thousands of years ago | _____ |
| _____ | 9. dinosaur leg bone containing quartz instead of calcium | _____ |
| _____ | 10. flesh, fur, and bones of a wooly mammoth preserved in frozen ground | _____ |
| _____ | 11. thin cavity in a rock showing where a shell has decayed | _____ |
| _____ | 12. burrows of worms that lived millions of years ago | _____ |
| _____ | 13. living pine tree more than 4000 years old | _____ |
| _____ | 14. thin layer of carbon from the remains of a plant that lived thousands of years ago | _____ |

Directions: Answer the following questions on the lines provided.

15. What must happen to a dead organism if a fossil is to form?

16. What do you know about a rock layer found on a mountain if you find a seashell fossil in the layer?

17. What three kinds of information can geologists gather from a study of fossils?
